OCCUPATIONAL ANALYSES SERIES

Motor Vehicle Body Repairer (Metal and Paint)

1997

Human Resources Development Canada
Développement des ressources humaines Canada

Canada

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Occupational Analyses Series

Motor Vehicle Body Repairer (Metal and Paint)

1997

Standards, Planning and Analysis

Human Resources Partnerships Directorate

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The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this occupational analysis as the national standard for the occupation of motor vehicle body repairer (metal and paint).

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This analysis was prepared by the Human Resources Partnerships Directorate. The planning, coordination and processing of the analysis were undertaken by staff members of the Standards, Planning and Analysis Division.

OTHER RELATED OCCUPATIONAL TITLES

This analysis covers tasks performed by a motor vehicle body repairer (metal and paint) whose occupational title has been identified by some provinces and territories of Canada under the following names:

Auto Body and Collision Damage
Auto Body Technician
Automotive Collision Repair Technician
Motor Vehicle Body (Repairer)
Motor Vehicle Body Repair
Motor Vehicle Body Repairer
Motor Vehicle Repair (Body)
Motor Vehicle Repairer

LIST OF PUBLISHED OCCUPATIONAL ANALYSES *

TITLE	NOC** Code
Aquaculture Technician (1977)	2221
Arts Administrator (1989)	0114
Automotive Painter (1995)	7322
Automotive Service Technician (1995)	7321
Automotive Technician - Automatic Transmission (1990)	7321
Automotive Technician - Electrical/Electronics (1992)	7321
Automotive Technician - Engine Repair and Fuel Systems (1989)	7321
Automotive Technician - Front-End (1989)	7321
Automotive Technician - Manual Transmission, Driveline and Brakes (1990)	7321
Aviation Machinist (1994)	7331
Baker (1991)	6252
Blaster (Surface) (1987)	7372
Boilermaker (1994)	7262
Bricklayer (1993)	7281
Cabinetmaker (1992)	7272
Carpenter (1993)	7271
Cement Finisher (1995)	7282
Construction Electrician (1994)	7241
Cook (1991)	6242
Electrical Mechanic (1981)	7333
Electronics Technician Vol. I (1986) (Video Equipment)	2242
Electronics Technician Vol. II (1986) (Audio Equipment)	2242

* **Red Seal analyses are indicated in bold**

** **National Occupational Classification**

Electronics Technician Vol. III (1986) (Computer Equipment)	2242
Electronics Technician Vol. IV (1986) (Office Equipment)	2242
Electronics Technician Vol. VI (1986) (Communication Equipment)	2242
Electronics Technician Vol. VII (1986) (Signaling Equipment)	2242
Electronics Technician Vol. VIII (1986) (Navigation Equipment)	2242
Electronics Technician Vol. IX (1986) (Video Game Equipment)	2242
Electronics Technician Vol. X (1987) (CADD Equipment)	2242
Electronics Technician Vol. XI (1987) (CAM Equipment)	2242
Electronics Technician Vol. XII (1987) (Robotics Equipment)	2242
Electronics Technician Vol. XIII (1987) (Biomedical and Laboratory Equipment)	2242
Electronics Technician Vol. XIV (1987) (Industrial Process-Control Equipment)	2243
Farm Equipment Mechanic (1994)	7312
Floorcovering Installer (1991)	7295
Glazier (1994)	7292
Hairstylist (1992)	6271
Heating (Gas and Oil) Servicer - Commercial and Industrial (1978)	7331
Heavy Equipment Mechanic (1987)	7312
Heavy Equipment Operator (1983)	7421
Industrial Electrician (1987)	7242
Industrial Instrument Mechanic (1988)	2243
Industrial Mechanic (Millwright) (1996)	7311
Insulator (Heat and Frost) (1993)	7293
Ironworker (Generalist) (1993)	7264
Lather (Interior Systems Mechanic) (1994)	7284

Logistics (1992)	0713
Machinist (1992)	7231
Major Electrical Appliance Repairer (1984)	7332
Mobile Crane Operator (1992)	7371
Motorcycle Mechanic (1995)	7334
Motor Vehicle Body Repairer (Metal and Paint) (1997)	7322
Motor Vehicle Repairer (Truck and Transport) (1983)	7321
New Home Builder and Residential Renovation Contractor (1992)	0712
Oil Burner Mechanic (1997)	7331
Painter and Decorator (1993)	7294
Partsperson (1995)	1472
Plumber (1996)	7251
Power Engineer (1997)	7351
Powerline Technician (1996)	7244
Refrigeration and Air Conditioning Mechanic (1997)	7313
Roofer (1991)	7291
Sheet Metal Worker (1990)	7261
Sprinkler System Installer (1995)	7252
Steamfitter-Pipefitter (1996)	7252
Steel Fabricator (Fitter) (1994)	7263
Tool and Die Maker (1992)	7232
Truck-Trailer Repairer (1994)	7321
Welder (1996)	7265

REQUESTS FOR THESE PUBLICATIONS SHOULD BE FORWARDED TO:

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FOREWORD

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to co-operate with provincial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources Development Canada sponsors a program, under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA), to develop a series of occupational analyses.

The Occupational Analysis Program has the following objectives:

- to identify and group the tasks performed by skilled workers in particular occupations;
- to identify those tasks that are performed by skilled workers in every province and territory;
- to develop instruments for use in the preparation of interprovincial standards "Red Seal" examinations and curricula for training leading to the certification of skilled workers;
- to facilitate the mobility, in Canada, of trainees and skilled workers; and
- to supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations.

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GUIDE TO ANALYSIS

DEVELOPMENT OF ANALYSIS

A draft analysis is developed by a knowledgeable consultant who, with the assistance of a committee of industry experts in the field, identifies all the tasks performed in the occupation.

The draft is then assigned to occupational analysts at Human Resources Development Canada for review, translation and edit to ensure conformity with the nationally approved format.

The analysis is forwarded to provincial/territorial authorities for validation by specialists in the field. Their recommendations are assessed and incorporated into the final draft which also includes the identification of the common core tasks performed in the occupation.

The occupational analysis is published in both official languages.

STRUCTURE OF ANALYSIS

To facilitate the understanding of the nature of the occupation, the work performed is divided into the following divisions:

A. **BLOCK** - is the largest division within the analysis and reflects a distinct operation relevant to the occupation.

B. **TASK** - is the distinct activity that, combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a "BLOCK".

C. **SUB-TASK** - is the smallest division into which it is practical to sub-divide any work activity and, combined with others, fully describes all duties constituting a "TASK".

Enabling Objectives

The element of skill and knowledge that an individual must acquire to perform the task adequately.

Trend

Any shifts or changes in technology that affect the sub-tasks are identified under this heading.

VALIDATION METHOD

At the request of the Canadian Council of Directors of Apprenticeship (CCDA), the Standardization Sub-Committee developed a method for the validation of the national Red Seal occupational analyses.

A draft of the analysis is sent to all provinces/territories for validation. Each jurisdiction rates the sub-tasks and applies percentage ratings to blocks and tasks. This method for the validation of the national occupational analyses identifies common core tasks across Canada for a specific occupation. This feature facilitates the weighting of the Interprovincial Red Seal examinations.

DEFINITIONS

YES: the sub-task is performed.

NO: the sub-task is not performed.

BLOCK %: the average time a worker spends performing each block in a given year in relation to other blocks of the analysis, taking into consideration the complexity (importance plus difficulty) of the block. (See Appendices "C" and "D" for numerical and graphical representations of this specific occupation.)

TASK %: the average time a worker spends performing each task in relation to other tasks within the block, taking into consideration the complexity (importance plus difficulty) of the task. (See Appendix "C" for numerical representation of this specific occupation.)

NV: Not Validated by the province/territory.

ND: Not Designated in that province/territory.

COMMON CORE

The criteria for determining common core are dependant on the performance of sub-tasks. If 70% of the responding jurisdictions (excluding NVs and NDs) perform the sub-task, it shall be considered common core.

In the analysis, Block A is reserved for safety practices. Since safety practices are a mandatory feature of all occupations, it is considered common core and ratings are not required.

Interprovincial Red Seal examinations are based on the common core identified through this validation process.

SCOPE OF ANALYSIS

The motor vehicle body repairer (metal and paint) is a skilled tradesperson who possesses a wide range of knowledge and skills in areas such as:

- repair and replacement of glass and glass assemblies;
- repair and replacement of sheet metal panels;
- repair and replacement of plastic and composite panels;
- repair and replacement of frame and structural components;
- repair and replacement of mechanical components;
- repair and replacement of electrical components;
- diagnose and repair electronic systems;
- assessment of damage;
- refinishing;
- detailing; and
- welding.

Depending on the place of employment, a motor vehicle body repairer (metal and paint) may be called upon to work on any type of motor vehicle from the smallest of automobiles to the largest of trucks or buses.

Written in behavioural terms, the analysis outlines the most common and frequently required tasks and sub-tasks that a qualified motor vehicle body repairer (metal and paint) will be required to perform efficiently in the trade anywhere in Canada.

OBSERVATIONS AND TRENDS ARISING FROM ANALYSIS

Technological advancements, design modifications, passenger safety and innovations in manufacturing continue to change the design and construction of the automobile. These advancements have also resulted in changes to the motor vehicle body trade repairer (metal and paint). The use of composite materials in the manufacturing of parts and components as well as the move toward automobile components being part of the structure of the automobile has resulted in the updating of existing training programs.

The trend to separate the body repairer and vehicle painter into separate trade designations continues. Large repair shops tend to have tradespersons specialize. The smaller body repair shops, due to size and volume of work, continue to have tradespersons perform a wide variety of body repair work.

The motor vehicle body repairer (metal and paint) continues to have the responsibility to restore the vehicle to its original appearance and handling capabilities. Additionally, the motor vehicle body repairers now must concern themselves with the additional responsibilities of the structural integrity of the vehicle, the structural integrity of vehicle components and safety restraint systems for passengers. These factors have contributed to an increase in the level and complexity of auto body repair technology.

Frame construction has evolved from the conventional frame technology, to unibody, to today's technology where, in addition to the frame, an increasing number of the vehicle components such as glass panels and body panels contribute to the vehicle's structural strength and integrity. As a result of industry's movement toward an increasing number of vehicle components contributing to the overall strength and integrity of the vehicle, the motor vehicle body repairer (metal and paint) is working with and to manufacturer's specifications and instructions that represent an increased higher level of technology.

The use of safety devices such as air bags and collapsible components, the move toward vehicle components contributing to the structural strength and integrity of the vehicle, the increased use of composite materials, the use of anti-blocking braking systems (ABS) plus the use of more advanced primers, paints and paint finishes has moved the auto body repairer to the auto body technician level.

For the purpose of this analysis, the glossary of terms has been modified to reflect these advances. The definitions have also been changed to reflect the new technological advances.

ANALYSIS

BLOCK A SAFETY

Task 1 **Demonstrates safe working practices and techniques to ensure an injury-free work place.**

Trend: There is an increasing importance placed on first aid training including cardiopulmonary resuscitation (CPR). There are also increased concerns regarding the use of materials and practices that are health and environmental hazards.

	Sub-tasks	Enabling Objectives	Tools & Equipment
1.01	Applies first aid.	knowledge of basic first aid procedures knowledge of first aid for eye injuries knowledge of location and use of first aid kit ability to administer basic first aid knowledge of mouth-to-mouth resuscitation and CPR	first aid kit, eye wash station
1.02	Maintains good housekeeping.	knowledge of emergency phone numbers ability to maintain cleanliness and order in work area ability to apply correct methods for storage of tools, shop equipment and loose objects ability to remove hazards ability to keep aisles clear ability to clean up grease and oil spills ability to dispose of waste materials	brooms, shovels, disposal containers, storage boxes or hangers, Absorb-All, sawdust

	Sub-tasks	Enabling Objectives	Tools & Equipment
1.03	Wears personal protective equipment.	knowledge of personal protective equipment required for specific operations knowledge of impact of non-use of personal equipment ability to adjust and wear personal protective equipment properly	paint suit, positive pressure air fed respirator, air purifying respirator (charcoal), safety footwear, dust mask, ear protectors, air hoses, safety eye wear, solvent resistant gloves, dust mask
1.04	Operates emergency safety equipment.	knowledge of location of emergency safety equipment knowledge of operating procedures for emergency safety equipment	fire extinguishers, fire blanket, stretchers, respirator, first aid station, eye wash station, fire hoses
1.05	Assures protection from fire hazards.	knowledge of types of fire equipment knowledge of types of fires (oil, etc.) knowledge of safe disposal procedures for paint contaminated material (rags, filters) knowledge of hazards involved with alternate fuel vehicles ability to shut down fuel delivery to propane and natural gas powered vehicles	fire extinguishers, environmentally safe disposal containers
1.06	Handles hazardous materials.	knowledge of hazardous materials commonly found in automotive technician centres knowledge of safety equipment required to handle hazardous materials knowledge of storage requirements for lubricants and solvents	bulletins, federal, provincial or territorial regulations regarding hazardous materials, proper protective gear, approved container
1.07	Complies with government safety standards and regulations.	knowledge of Workplace Hazardous Materials Information System (WHMIS) regulations	bulletins, federal, provincial or territorial regulations regarding hazardous materials,

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to read Material Safety Data Sheets (MSDS)	bulletins regarding baking procedures on vehicles with propane
	knowledge of safe handling procedures for paint and solvent	
	knowledge of disposal procedures for paint and solvent wastes	
	knowledge of the safe handling procedures for paint shop wastes (rags, filters, etc.)	
	knowledge of hazards of airborne contaminants	
	knowledge of Worker's Compensation Board (WCB) legislation	
	knowledge of Occupational Health and Safety (OHS) Regulations	

BLOCK B WORK PRACTICES AND PROCEDURES

Task 2 **Communicates with others.**

Trend: The trend is moving towards automation, e.g. fax, computer (interface, Photolink, Shoplink) and telephone hot line.

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.01	Accesses information.	knowledge of communication skills required to ask appropriate questions ability to operate communication equipment ability to acquire information ability to interpret information received	fax, computer, micro-fiches, catalogues, shop manuals, bulletins

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

2.02	Prepares and imparts technical information.	knowledge of the auto body industry knowledge of automobile construction, auto body parts and accessories ability to prepare technical information ability to impart technical information	fax, computer, micro-fiches, catalogues, shop manuals, bulletins

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.03	Applies verbal communication skills.	knowledge of verbal presentation skills knowledge of questioning techniques ability to communicate information ability to acquire information through questioning	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

2.04	Applies written communication skills.	knowledge of written communication skills ability to interpret written information ability to communicate in writing	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

2.05	Uses office equipment.	knowledge of the types of office equipment available knowledge of the purpose of office equipment ability to operate office equipment	fax, computer, telephone

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

Task 3 **Prepares repair estimates.**

Trend: The trend is moving towards automation and computerized estimating.

	Sub-tasks	Enabling Objectives	Tools & Equipment
3.01	Obtains necessary customer and vehicle information.	knowledge of where to find specific vehicle information knowledge of vehicle identification number (VIN) tag and paint code ability to interpret VIN code and paint tag ability to communicate with client to acquire specific information	technical manuals, bulletins

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.02	Performs visual inspection.	knowledge of trade standards ability to recognize the cause and effect of collision damage.	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.03	Lists parts, materials and labour required.	knowledge of vehicle construction knowledge of parts terminology knowledge of parts by source and price knowledge of material by source and costs ability to interpret collision estimating guide	estimation sheet, collision estimating guide, calculator, computer terminal

	Sub-tasks	Enabling Objectives	Tools & Equipment
		ability to identify repairable and non-repairable parts	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.04	Calculates repair costs.	knowledge of the purpose of a collision estimate sheet ability to perform basic mathematical operations ability to complete a collision estimate sheet	estimation sheet, collision estimating guide, calculator, computer terminal

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	no	yes	yes	yes	yes	NV

Task 4 **Follows work practices and procedures.**

Trend: The trend is towards more panel replacement rather than repair.

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.01	Applies organizational skills.	knowledge of repair and replacement techniques knowledge of repair and replacement procedures ability to perform repair and replacement techniques and procedures in an organized, sequential manner	technical manuals, bulletins

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.02	Interprets the work order.	knowledge of all aspects of collision repair ability to interpret the work order	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.03	Inspects the damage.	knowledge of all aspects of collision repair knowledge of the techniques and procedures required for the repair and replacement of parts and components knowledge of inspection procedures ability to inspect the damage	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.04	Reconciles parts and materials received to estimate.	knowledge of repair terminology ability to compare parts listed to parts invoiced	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.05	Identifies discrepancies.	knowledge of required parts and materials ability to perform discrepancy identification procedures ability to identify discrepancies	estimation sheet, collision estimating guide, calculator, computer terminal

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.06	Determines repair procedure.	knowledge of collision repair procedures ability to develop a repair plan	estimate sheet, job work order

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.07	Effects repair required.	knowledge of repair techniques and procedures ability to perform repair techniques and procedures	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, spoons, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, vice grips, dolly, pneumatic tools, hydraulic floor jacks, surge protector

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.08	Performs pre-delivery inspection.	knowledge of all damaged areas and repairs completed ability to perform pre-delivery inspection procedures ability to perform clean-up techniques	estimate sheet, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, spoons, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, vice grips

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 5 **Operates tools and equipment.**

Trend: Equipment is becoming more advanced requiring updating in operating techniques.

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.01	Operates hand and power tools.	knowledge of tools used in repair and replacement procedures ability to operate tools when performing repair and replacement maintenance procedures	manufacturers' operating instructions

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

5.02	Operates general shop equipment.	knowledge of types of equipment used when performing repair and replacement procedures ability to operate shop equipment	manufacturers' operating instructions

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

5.03	Operates frame and measuring equipment.	knowledge of set-up procedures for frame and measuring equipment knowledge of operating procedures for frame and measuring equipment ability to set up frame and measuring equipment ability to operate frame and measuring equipment	manufacturers' operating instructions

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.04	Operates welding equipment.	knowledge of set-up procedures for welding equipment knowledge of operating procedures for welding equipment ability to set up welding equipment ability to operate welding equipment	manufacturers' operating instructions, GMAW, spot welder, oxy-fuel cutter, brazing, plasma cutter, ARC cutter, welding blankets

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

5.05	Operates refinishing equipment.	knowledge of set-up procedures for refinishing equipment knowledge of operating procedures for refinishing equipment ability to set up refinishing equipment ability to operate refinishing equipment	manufacturers' operating instructions

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 6 **Maintains tools and equipment.**

Trend: Equipment is becoming more advanced requiring updating in operating and maintenance techniques.

	Sub-tasks	Enabling Objectives	Tools & Equipment
6.01	Maintains hand and power tools.	knowledge of tools used in maintenance procedures	manufacturers' maintenance

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate tools when performing maintenance procedures	instructions, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife or scraper, wire cutters, torque wrench, vice grips

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks	Enabling Objectives	Tools & Equipment
6.02 Maintains general shop equipment.	knowledge of types of equipment used when performing maintenance procedures ability to operate shop equipment	manufacturers' maintenance instructions, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife or scraper, wire cutters, torque wrench, vice grips

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks	Enabling Objectives	Tools & Equipment
6.03 Maintains frame and measuring equipment.	knowledge of location of maintenance procedures for frame and measuring equipment ability to interpret and apply maintenance procedures on frame and measuring equipment	manufacturers' maintenance instructions, sockets, ratchets, wrenches, pliers, clamps, measuring tape

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks		Enabling Objectives	Tools & Equipment
6.04	Maintains welding equipment.	knowledge of location of maintenance procedures for welding equipment ability to interpret and apply maintenance procedures on welding equipment	manufacturers' maintenance instructions, sockets, ratchets, wrenches, pliers, screwdrivers, files, tin snips, wire cutters, torque wrench, tip cleaner

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.05	Maintains refinishing equipment.	knowledge of location of maintenance procedures for refinishing equipment ability to interpret and apply maintenance procedures on refinishing equipment	manufacturers' maintenance instructions, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, punches, torque wrench, gun washer machine, gun wash (thinner), tip cleaner

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK C FRAME AND STRUCTURAL COMPONENTS

Task 7 Assesses damages.

Trend: Is to assess complete vehicle for secondary damage, as damage is not restricted to primary collision area.

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.01	Identifies primary and secondary damage.	knowledge of what constitutes primary and secondary damage ability to identify primary and secondary damage	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

7.02	Sets up vehicle on frame machine.	knowledge of frame equipment ability to set up frame straightening equipment	stationary, portable, racks, benches, track style straighteners

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

7.03	Measures structure to specifications.	knowledge of techniques and procedures for measuring structure components knowledge of manufacturing specifications ability to set up and operate measuring equipment ability to interpret measuring specifications	manufacturing specifications, measuring tape, tram bar, centring gauges, laser measuring systems

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

7.04	Determines repair and replacement procedures.	knowledge of repair and procedures required	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange

Sub-tasks	Enabling Objectives	Tools & Equipment
	knowledge of tools required for repair or replacement ability to remove or replace structural component using tools and equipment	tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection materials, welding blankets, electronic protection device

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 8 **Repairs structural component.**

Trend: The trend is use of uni-body construction and controlled collapse components.

	Sub-tasks	Enabling Objectives	Tools & Equipment
8.01	Sets up vehicle for repair equipment.	knowledge of frame equipment ability to set up frame straightening equipment	stationary, portable, racks, benches, track style straighteners

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

8.02	Prepares the component for repair.	knowledge of recommended repair procedure knowledge of types of devices and systems described ability to prepare component for repair ability to use tools and equipment	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection materials, welding blankets,

	Sub-tasks	Enabling Objectives	Tools & Equipment
			electronic protection device

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

8.03	Straightens component.	knowledge of recommended repair procedures knowledge of devices and systems used in recommended repair procedures ability to operate straightening equipment	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection materials, welding blankets, electronic protection device, hammers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

8.04	Verifies specifications.	knowledge of manufacturing specifications, and measuring equipment ability to meet manufacturing specifications	measuring devises, specifications

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

8.05	Restores integrity.	knowledge of recommended repair procedure to restore integrity and repair equipment ability to restore integrity and use repair equipment	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion

											protection material, welding blankets, electronic protection device, hammers	
		NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
8.06	Prepares surface for corrosion protection.					knowledge of manufacturer's recommended procedures knowledge of corrosion protection tools and equipment ability to perform manufacturer's specified procedures						sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, drill, wire wheels, sand blaster, sander, masking materials, personal protective equipment	
		NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
8.07	Applies corrosion protection.					knowledge of recommended corrosion protection application and applicators ability to apply corrosion protection						sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, manual applicators, pressure applicators, personal protective equipment	
		NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 9 **Replaces structural component.**

Trend: The trend is toward more use of structural components.

	Sub-tasks	Enabling Objectives	Tools & Equipment
9.01	Corrects secondary damage.	knowledge of secondary damage knowledge of manufacturer's specifications knowledge of structural tools and equipment ability to assess secondary damage ability to correct secondary damage ability to use structural repair tools and equipment	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection material, hammers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.02	Removes component.	knowledge of component removal procedures required for structural component removal knowledge of tools and equipment required for structural component removal ability to remove structural component to manufacturer's specifications ability to use tools and equipment required for structural component removal	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
9.03	Prepares damaged area for replacement component.	knowledge of procedures for preparing area knowledge of tools and materials required for preparing area ability to prepare area ability to use required tools and apply welding-thru primer	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, grinder, flange tool, hole punch, drill, sand blaster, masking materials

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.04	Installs replacement component.	knowledge of component replacement procedures knowledge of tools and equipment required for installation of new component knowledge of measuring equipment ability to install new components ability to use tools and equipment ability to interpret measuring specifications	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, GMAW welder, measuring equipment, grinder, welding blankets, electronic protection device

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.05	Verifies specifications.	knowledge of manufacturer's specifications ability to verify if repair meets manufacturer's specifications	measuring equipment, specification documentation

	Sub-tasks	Enabling Objectives	Tools & Equipment
		ability to use tools and equipment	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.06	Prepares surface for corrosion protection.	knowledge of manufacturer's recommended procedures knowledge of corrosion protection tools and equipment ability to perform manufacturer's recommended procedures ability to operate required tools and equipment	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, drill, wire wheels, sand blaster, sander

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.07	Applies corrosion protection.	knowledge of recommended corrosion protection application procedures and applicators ability to apply corrosion protection	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, manual applicators, pressure applicators, masking materials

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK D OUTER BODY PANELS

Task 10 **Assesses damages.**

Trend: Movement towards composite panels.

	Sub-tasks	Enabling Objectives	Tools & Equipment
10.01	Identifies panel composition.	knowledge of manufacturer and aftermarket's bulletins and manuals ability to interpret manuals and bulletins ability to identify composition of panel	magnet, screwdrivers, grinder

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

10.02	Determines repair and replacement procedures.	knowledge of vehicle construction knowledge of properties and characteristics of panel materials ability to assess damage severity ability to recognize assembly techniques									

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 11 **Repairs panel.**

Trend: The repairing of panels is becoming less frequent, while replacing of panels is becoming more frequent.

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.01	Prepares panel for reshaping.	knowledge of vehicle construction knowledge of panel repair techniques ability to identify panel material ability to determine the directions of damaging force ability to remove parts to access panel	basic tool box

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

11.02	Reshapes panel.	knowledge of shaping and shrinking techniques knowledge of relieving stress ability to perform shrinking and shaping techniques ability to perform stress relieving ability to assess the damage direction	basic tool box, grinder, heating equipment, shrinking equipment, dent puller

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

11.03	Restores panel strength.	knowledge of vehicle construction knowledge of panel composition ability to restore pre-accident strength knowledge of when to have a reinforcing panel	basic tool box, grinder, GMAW welder, welding blankets

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.04	Prepares panel surface for fill.	knowledge of panel composition knowledge of filling techniques knowledge of procedures for preparing panels for fillers ability to grind the damaged area ability to operate cleaning equipment	grinder, sander, air blower

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

11.05	Fills panel.	knowledge of panel composition and use of fillers ability to apply fillers	spreaders, applicators, mixing tools

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

11.06	Sands filler.	knowledge of filler characteristics knowledge of sanding techniques knowledge of sanding and other abrasive products ability to select abrasives ability to sand and level filler to original contour	files, blocks, air blower, sandpapers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.07	Applies corrosion protection.	knowledge of existing corrosion protection methods knowledge of existing corrosion protection products ability to select corrosion protection products ability to apply corrosion protection products	corrosion protection application equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 12 Replaces panel.

Trend: Trend is toward replacing rather than repairing panels.

	Sub-tasks	Enabling Objectives	Tools & Equipment
12.01	Prepares for removal of panel.	knowledge of vehicle construction knowledge of panel composition knowledge of tools required to remove panel ability to prepare a panel for removal ability to remove necessary parts	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

12.02	Removes panel.	knowledge of parts removal procedures	sockets, ratchets, wrenches, hammers,

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to remove panels ability to weld panels	pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, cutting equipment, grinder, heating equipment, plasma cutter, welding blankets

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks	Enabling Objectives	Tools & Equipment
12.03 Prepares panel for installation.	knowledge of vehicle construction knowledge of parts replacement procedures ability to use installation tools ability to clean contact surfaces ability to pre-fit the replacement panel	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks	Enabling Objectives	Tools & Equipment
12.04 Installs panel.	knowledge of parts replacement procedures knowledge of welding techniques knowledge of bonding procedures ability to align the panel ability to operate welding equipment	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, torque wrench, welding equipment, bonding equipment,

	Sub-tasks	Enabling Objectives	Tools & Equipment
		ability to apply bonding procedures	grinder, welding blankets

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

12.05	Applies corrosion protection.	knowledge of corrosion protection methods knowledge of corrosion protection products knowledge of body and seam sealer application ability to apply corrosion protection ability to apply seam sealers	corrosion protection applicator, seam sealer applicator, masking materials

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK E GLASS

Task 13 Repairs or replaces movable glass.

Trend: Hardware associated with moveable glass is becoming less complicated.

	Sub-tasks	Enabling Objectives	Tools & Equipment
13.01	Tests for leaks.	ability to locate reference material	screwdrivers, sockets, extensions, wrenches,

Sub-tasks		Enabling Objectives	Tools & Equipment
		knowledge of visual inspection, water-, air-, light- and paper-testing procedures	Allen keys, trim clip removal tools, drill, bits, rivet gun and rivets

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.02	Repairs leaks.	knowledge of leak repair procedures ability to repair leaks ability to interpret reference materials	screwdrivers, sockets, extensions, wrenches, Allen keys, trim clip removal tools, drill, bits, rivet gun and rivets, sealant

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.03	Adjusts hardware.	knowledge of hardware adjusting procedures knowledge of types of glass hardware ability to recognize various types of glass hardware ability to assess panel for hardware adjustments ability to adjust glass hardware	screwdrivers, sockets, extensions, wrenches, Allen keys, trim clip removal tools, drill, bits, rivet gun and rivets

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.04	Removes glass.	knowledge of safe glass removal procedures	screwdrivers, sockets, extensions, wrenches, Allen keys, trim clip

	Sub-tasks	Enabling Objectives	Tools & Equipment
		ability to assess panel for safe removal of glass	removal tools, drill, bits, rivet gun and rivets
		ability to remove glass safely	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.05	Installs glass.	knowledge of glass installation procedures	screwdrivers, sockets, extensions, wrenches, Allen keys, trim clip removal tools, drill, bits, rivet gun and rivets, adhesives
		ability to reference material	
		ability to install glass	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.06	Replaces glass.	knowledge of glass installation procedures	screwdrivers, sockets, extensions, wrenches, Allen keys, trim clip removal tools, drill, bits, rivet gun and rivets, adhesives
		ability to interpret reference material	
		ability to select correct glass type for panel	
		ability to install glass	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.07	Checks for leaks and operation.	knowledge of leak test procedures	light, water hose, air hose, ultrasonic equipment, paper, soapy water
		knowledge of manufacturer's operating procedures	
		ability to apply leak test procedures	

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to check operation to manufacturer's specifications	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 14 **Repairs or replaces fixed glass.**

Trend: Fixed glass is becoming a more integral part of complete motor vehicle integrity and strength.

Sub-tasks	Enabling Objectives	Tools & Equipment
14.01 Tests for leaks.	knowledge of location of manufacturer's information ability to interpret manufacturer's information ability to test for leaks to manufacturer's specifications	blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, propane torch, caulking gun, duct tape, latex gloves, rags, panel protection covers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

14.02	Repairs leaks.	knowledge of location of reference sources	blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass

	Sub-tasks	Enabling Objectives	Tools & Equipment
		knowledge of glass installation leak repair procedures ability to access leak repair information ability to repair leaks	removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, caulking gun, duct tape, latex gloves, rags, panel protection covers, adhesives

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

14.03	Removes glass.	knowledge of location of glass removal procedures knowledge of glass removal procedures ability to interpret glass removal procedures ability to remove glass	blow gun, razor blade, and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, propane torch, caulking gun, duct tape, latex gloves, rags, panel protection covers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

14.04	Installs glass.	knowledge of location of glass installation procedures knowledge of glass installation procedures	blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to interpret glass installation procedures ability to determine materials needed ability to install glass	equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, propane torch, caulking gun, duct tape, latex gloves, rags, panel protection covers

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks	Enabling Objectives	Tools & Equipment
14.05 Replaces glass.	knowledge of glass replacement materials knowledge of glass replacement procedures ability to determine materials needed ability to replace glass	blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, caulking gun, duct tape, latex gloves, rags, panel protection covers, adhesives

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Sub-tasks	Enabling Objectives	Tools & Equipment
14.06 Checks for leaks.	knowledge of leak test procedures ability to apply leak test procedures	service light, water hose, air hose, ultrasonic equipment, paper, soapy water

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK F MECHANICAL COMPONENTS

Task 15 Diagnoses mechanical problems.

Trend: Trend is towards more diagnostics being performed on mechanical components to determine repair or replacement.

	Sub-tasks	Enabling Objectives	Tools & Equipment
15.01	Inspects mechanical faults visually.	knowledge of location of components knowledge of system operation ability to locate components ability to operate systems	shop manuals, technical bulletins

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

15.02	Tests mechanical systems.	knowledge of systems operation knowledge of testing equipment knowledge of manufacturer's specifications and testing procedures ability to interpret manufacturers' specifications and testing procedures ability to perform tests, using test equipment ability to diagnose the problem	shop manuals, testing equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
15.03	Determines procedure for repair.	knowledge of system operation knowledge of manufacturer's repair procedures ability to interpret manufacturer's specifications and repair procedures	shop manuals, technical bulletins

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 16 **Repairs mechanical system.**

Trend: The trend is towards minor mechanical repairs being performed by the motor vehicle body repairer (metal and paint).

	Sub-tasks	Enabling Objectives	Tools & Equipment
16.01	Sets up repair equipment.	knowledge of manufacturer's specifications knowledge of tools and equipment required ability to interpret manufacturer's specifications ability to prepare components for repair	shop manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

16.02	Removes parts for accessibility.	knowledge of component location	shop manuals, torque wrench, gaskets, spring compressor, ball joint

	Sub-tasks	Enabling Objectives	Tools & Equipment
		knowledge of manufacturer's specifications and assembly techniques ability to locate component ability to interpret manufacturer's specifications ability to remove parts correctly	remover, pullers, hydraulic press

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

16.03	Repairs component.	knowledge of component location knowledge of system operation knowledge of manufacturer's specifications knowledge of repair methods and techniques ability to locate component ability to perform repair methods and techniques ability to interpret manufacturer's specifications ability to use specific repair equipment	shop manuals, specific repair equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
16.04	Verifies system operation and that specifications are met.	knowledge of system operation knowledge of manufacturer's specifications knowledge of testing equipment ability to operate system ability to interpret manufacturer's specifications ability to use testing equipment and shop manuals	shop manuals, specific repair and test equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 17 **Replaces mechanical component.**

Trend: Towards replacement rather than repair.

	Sub-tasks	Enabling Objectives	Tools & Equipment
17.01	Sets up repair equipment.	knowledge of manufacturer's specifications knowledge of tools and equipment required ability to interpret manufacturer's specifications ability to prepare component for removal	shop manuals, specific tools and equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
17.02	Removes defective component.	knowledge of component location knowledge of manufacturer's specifications knowledge of components operation knowledge of specific tools and operation equipment ability to interpret manufacturer's specifications ability to locate components ability to operate tools and equipment	shop manuals, specific tools and equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

17.03	Installs component.	knowledge of manufacturer's specifications knowledge of component operation knowledge of tools and equipment required ability to interpret manufacturer's specifications ability to operate tools and equipment	shop manuals, specific tools and equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

17.04	Verifies component operation and that specifications are met.	knowledge of manufacturer's specifications	shop manuals, testing equipment

Sub-tasks	Enabling Objectives	Tools & Equipment
	knowledge of components and system operation	
	knowledge of testing equipment	
	ability to interpret manufacturer's specifications	
	ability to operate component and systems	
	ability to operate equipment	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK G ELECTRICAL SYSTEM

Task 18 Diagnoses electrical problems.

Trend: The motor vehicle body repairer (metal and paint) has to perform electrical diagnosis and repair more frequently. Computer replacement or diagnostic is also becoming common practice.

	Sub-tasks	Enabling Objectives	Tools & Equipment
18.01	Inspects electrical system visually.	knowledge of location of electrical systems	
		ability to recognize damaged components	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
18.02	Tests electrical system.	knowledge of diagnostic equipment knowledge of electrical circuits knowledge of testing procedures knowledge of manufacturer's testing procedures ability to read wiring diagrams ability to use diagnostic equipment	wiring diagrams, continuity testers, test lamps, computerized diagnostic equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	NV

18.03	Interprets fault codes and flow charts.	knowledge of manufacturer's troubleshooting procedures and fault codes knowledge of electrical circuits knowledge of electronic components and their function ability to read fault codes ability to read flow charts ability to read wiring diagrams	manufacturer's manuals and specifications, diagnostic equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	NV

18.04	Verifies diagnosis of problem.	knowledge of manufacturer's prescribed sequence of operation of system ability to operate system ability to compare actual sequence of operation to manufacturer's	manufacturer's procedures and specifications, diagnostic equipment

Sub-tasks	Enabling Objectives	Tools & Equipment
	prescribed sequence of operation of system	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	NV

Task 19 **Repairs electrical system.**

Trend: Trend is towards more component replacing than repairing.

Sub-tasks	Enabling Objectives	Tools & Equipment
19.01 Prepares system for repair.	knowledge of the types of parts and components requiring repair	
	knowledge of which parts to remove to facilitate the repair	
	knowledge of manufacturers' procedures to safe guard electronic components	
	ability to locate components	
	ability to remove components	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

19.02	Repairs system.	knowledge of wiring repair procedures including soldering and solder-free paints	soldering gun, continuity tester, connectors, electrical tape
		ability to repair wiring to manufacturers' specifications	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
19.03	Verifies operation of system.	knowledge of manufacturer's prescribed sequence of operation of system knowledge of manufacturer's troubleshooting and testing procedures ability to operate system ability to compare actual operating sequence of system to manufacturer's prescribed operating sequence of system	manufacturer's procedures and specifications, diagnostic equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	NV

Task 20 **Replaces electrical component.**

Trend: Trend is towards more replacing of components and emphasis on precautions when installing components.

	Sub-tasks	Enabling Objectives	Tools & Equipment
20.01	Prepares system for component replacement.	knowledge of manufacturer's installation instructions and specifications ability to locate, disconnect and remove components	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
20.02	Removes defective component.	knowledge of vehicle construction knowledge of component removal procedures ability to remove components to manufacturer's specifications	sockets, ratchets, wrenches, pliers, screwdrivers, chisels, clamps, punches, tin snips, magnet, hack saw, measuring tape, wire cutters

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
20.03	Installs component to manufacturer's instructions.	knowledge of manufacturer's installation instructions and specifications ability to use manufacturer's replacement procedures	sockets, ratchets, wrenches, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, wire cutters, torque wrench, manufacturer's manual

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
20.04	Verifies operation of component.	knowledge of manufacturer's prescribed sequence of operation of system knowledge of manufacturer's testing procedures ability to operate system	manufacturer's manual, diagnostic equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	NV

BLOCK H RESTRAINT SYSTEMS

Task 21 Diagnoses restraint system.

Trend: The move is toward more elaborate restraint systems.

	Sub-tasks	Enabling Objectives	Tools & Equipment
21.01	Inspects restraint system visually.	knowledge of types of vehicle restraint systems knowledge of operation of vehicle restraint systems ability to interpret manufacturer's installation and specifications instructions ability to diagnose system faults	shop manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

21.02	Tests restraint system.	knowledge of manufacturer's test procedures knowledge of operation of restraint systems knowledge of types of diagnostic equipment ability to use diagnostic equipment ability to interpret manufacturer's test procedures ability to perform manufacturer's test procedures	shop manuals, manufacturer's diagnostic equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
21.03	Interprets fault codes and charts.	knowledge of where to locate fault codes and flow charts knowledge of operation of diagnostic equipment knowledge of construction of system ability to interpret fault codes ability to read flow charts and wiring diagrams ability to operate diagnostic equipment	diagnostic equipment, manufacturer's installation and specification manuals, manufacturer's flow charts

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	NV

21.04	Determines replacement procedure.	knowledge of operation of restraint systems knowledge of manufacturer's replacement procedures for component ability to identify system by type ability to interpret manufacturer's information	manufacturer's installation and specification manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 22 **Replaces restraint system.**

Trend: The move is toward component replacement.

	Sub-tasks	Enabling Objectives	Tools & Equipment
22.01	Prepares component system for replacement.	knowledge of location of components knowledge of manufacturer's replacement procedures ability to apply manufacturer's replacement procedures ability to access components to be replaced	manufacturer's installation and specification manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
22.02	Removes defective component.	knowledge of manufacturer's component removal procedures knowledge of component construction ability to apply manufacturer's component removal procedures	wrenches, screwdrivers, chisels, punches, sockets, ratchets, vice grips

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
22.03	Installs component to manufacturer's instructions.	knowledge of manufacturer's installation procedures knowledge of manufacturer's special handling instructions ability to follow manufacturer's installation procedures and instructions	wrenches, files, screwdrivers, chisels, punches, sockets, ratchets, vice grips, manufacturer's installation and specification manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
22.04	Verifies operation of system.	knowledge of manufacturer's prescribed sequence of operation knowledge of diagnostic equipment knowledge of manufacturer's testing procedures ability to operate diagnostic equipment ability to perform manufacturer's testing procedures	manufacturer's installation and specification manuals, diagnostic equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	NV

BLOCK I INTERIOR TRIM AND UPHOLSTERY

Task 23 Assesses damages.

Trend: The trend is toward more use of plastic components and computerized electrical systems.

	Sub-tasks	Enabling Objectives	Tools & Equipment
23.01	Inspects interior components visually.	knowledge of vehicle construction knowledge of damage analysis techniques and procedures ability to apply damage analysis techniques and procedures	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
23.02	Determines repair procedure.	knowledge of the composition of components types knowledge of repair techniques for component types ability to interpret manufacturer's repair information ability to identify the composition of interior components	shop manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

Task 24 **Repairs interior component.**

Trend: The move is toward improved repair techniques.

	Sub-tasks	Enabling Objectives	Tools & Equipment
24.01	Prepares component for repair.	knowledge of interior construction knowledge of component removal procedures knowledge of component repair techniques ability to identify composition of components by type ability to identify parts to be removed to facilitate repair	shop manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
24.02	Repairs component.	knowledge of sheet metal repair techniques knowledge of plastic panel repair techniques knowledge of refinishing techniques knowledge of parts removal procedures ability to repair sheet metal and plastic components ability to remove components for repair	plastic repair equipment and material, grinder, shop manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

24.03	Prepares component for refinishing.	knowledge of composition of interior components knowledge of preparation techniques ability to prepare component ability to determine refinish process	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

24.04	Refinishes component.	knowledge of composition of interior components knowledge of refinishing techniques knowledge of colour matching techniques	refinishing equipment and material

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate refinishing equipment	
	ability to tint paint colours	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 25 Replaces interior component.

Trend: More replacement than repair and more modular components.

Sub-tasks	Enabling Objectives	Tools & Equipment
25.01 Prepares interior component for replacement.	knowledge of interior components construction including the instrument panel	
	ability to determine which parts require removal for access to replace component	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

25.02	Removes defective component.	knowledge of vehicle interior construction	shop manuals
		knowledge of instrument panel construction	
		knowledge of removal procedures	
		ability to apply removal procedures	
		ability to interpret shop manuals	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
25.03	Refinishes component.	knowledge of composition of interior components knowledge of types of refinishing equipment knowledge of refinishing techniques and procedures ability to operate refinishing equipment ability to perform refinishing techniques and procedures techniques	refinishing equipment and material

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

25.04	Installs component.	knowledge of vehicle interior construction knowledge of assembly techniques ability to align interior components ability to interpret shop manuals ability to operate installation equipment ability to install components	shop manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK J REFINISHING

Task 26 Prepares surface.

Trend: The use of waterborne top coats and primers increasing and the use of high volume/low pressure (HVLP) spray equipment is on the rise.

	Sub-tasks	Enabling Objectives	Tools & Equipment
26.01	Inspects repair area visually.	knowledge of how to inspect repair area ability to inspect repair area	hand sanding equipment, paint identification manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
26.02	Determines refinishing procedure.	knowledge of trim that is interfering with the refinishing procedure knowledge of top coats and substrates knowledge of refinishing procedures ability to remove trim that is interfering with the refinishing procedure ability to determine top coats and substrates ability to determine refinish procedure	paint identification manuals

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
26.03	Cleans surface.	knowledge of operation of surface cleaning equipment knowledge of use of chemical cleaners and personal safety equipment ability to operate surface cleaning equipment ability to use chemical cleaners and personal safety equipment	chemical cleaners, rags, trim, razor blades, gloves, goggles, respirators, air blow gun

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

26.04	Masks adjacent areas.	knowledge of use of masking materials knowledge of paint blending techniques and procedures ability to use masking materials ability to apply paint blending techniques and procedures	masking materials, chemical cleaners, razor blades, dust masks

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

26.05	Sands surface.	knowledge of power and manual sanding tools and equipment knowledge of surface sanding techniques ability to operate sanding tools	masking materials, hand sanding equipment, sanding materials, chemical cleaners, rags, power sanding equipment, razor blades, dust masks, gloves, goggles, respirators

Sub-tasks		Enabling Objectives	Tools & Equipment
		ability to sand surfaces as determined by refinish procedures	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

26.06	Mixes primer.	knowledge of metal conditioners knowledge of types of primers and their application knowledge of primer manufacturer's mixing specifications ability to apply metal conditioners ability to identify types of primers and their applications ability to mix and apply primers to manufacturer's specifications	paint identification manuals, rags, primer application equipment, gloves, goggles, respirators

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

26.07	Applies primer.	knowledge of primer application equipment knowledge of techniques and procedures for applying primer ability to operate primer applications equipment ability to apply primer application techniques and procedures	masking materials, paint identification manuals, chemical cleaners, rags, primer application equipment, gloves, goggles, respirators

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
26.08	Performs final sanding.	knowledge of primer dry-through times and guide coats knowledge of final sanding techniques to the requirements of the refinish procedures knowledge of sanding tools, materials and equipment ability to determine primer dry-through times ability to use guide coats ability to use sanding techniques as determined by refinish procedures ability to use sanding tools, materials and equipment	hand sanding equipment, sanding materials, rags, power sanding equipment (infrared, etc.), razor blades, dust masks, gloves, goggles, respirators, heat drying equipment

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

Task 27 **Applies paint.**

Trend: Trend is towards environmentally friendly paints.

	Sub-tasks	Enabling Objectives	Tools & Equipment
27.01	Inspects prepared surface visually.	knowledge of visual inspection procedure knowledge of paint manufacturer's procedures and specifications ability to inspect prepared surface visually ability to determine paint procedures	paint identification manuals, other paint manufacturer's literature, blow guns, chemical cleaner and rags

Sub-tasks		Enabling Objectives	Tools & Equipment
		ability to apply paint to manufacturer's specifications	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

27.02	Determines paint procedure.	knowledge of different paint procedures knowledge of paint manufacturer's specifications ability to determine paint procedure ability to use paint manufacturer's recommendations	paint identification manuals, other paint manufacturer's literature, microfiches

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

27.03	Mixes paint.	knowledge of locations of paint code and identification manuals knowledge of mixing equipment knowledge of types of ground coat paints and value shades ability to locate paint codes on motor vehicle ability to use paint identification manuals ability to use paint mixing equipment ability to mix ground coats, paint and value shades	paint identification manuals, other paint manufacturer's literature, strainers, paint mixing machine, microfiches, paint scales, viscosity cups, paint shaker, measuring sticks, test cards, paint suits, gloves, goggles, respirators, chemical cleaner and rags

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
27.04	Matches paint.	knowledge of paint tinting techniques knowledge of use of test cards ability to apply paint tinting techniques ability to use test cards	paint identification manuals, other paint manufacturer's literature, strainers, paint application equipment, paint mixing machine, microfiches, paint scales, viscosity cups, paint shaker, measuring sticks, test cards, colour correction light, paint suits, gloves, goggles, respirators, chemical cleaner and rags

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

27.05	Performs final cleaning procedures.	knowledge of purpose of air blow repair area knowledge of final cleaning equipment knowledge of final cleaning procedures ability to work in final cleaning area safely ability to use final cleaning equipment ability to apply final cleaning procedures	blow guns, tack rags, strainers, gloves, goggles, respirators, paint booth, chemical cleaner and rags

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
27.06	Applies top coat.	knowledge of personal protective equipment knowledge of top coat application procedures using spray equipment and spray booth equipment knowledge of what constitutes a hazardous waste knowledge of waste disposal procedures and methods ability to use personal protective equipment ability to operate spray equipment as well as spray booth equipment to apply different types of top coats ability to identify hazardous wastes ability to dispose of hazardous wastepaint	paint identification manuals, other paint manufacturer's literature, tack rags, strainers, paint application equipment, viscosity cups, paint shaker, measuring sticks, test cards, paint suits, gloves, goggles, respirators, paint booth

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

BLOCK K DETAILING

Task 28 Assesses detailing requirements.

Trend: Consumers are more quality-conscious.

	Sub-tasks	Enabling Objectives	Tools & Equipment
28.01	Unmasks vehicle.	knowledge of unmasking procedures ability to perform unmasking	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

28.02	Reviews work order.	knowledge of work order detailing requirements ability to read and comprehend written information	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	no	yes	yes	yes	yes	NV

28.03	Determines detailing procedure.	knowledge of detailing sequence ability to determine sequence for detailing	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 29 **Performs detailing procedure.**

Trend: Consumers are more quality-conscious.

	Sub-tasks	Enabling Objectives	Tools & Equipment
29.01	Prepares for detailing.	knowledge of preparation procedure required for detailing	power polishers, corrosion prevention equipment, power

	Sub-tasks	Enabling Objectives	Tools & Equipment
			washer, soap, applicator and chamois

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

29.02	Installs trim and accessories.	knowledge of types of trim and accessories required when detailing ability to install trim and accessories	power polishers, corrosion protection equipment, power washer, soap, applicator and chamois

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

29.03	Polishes vehicle.	knowledge of polishing procedure knowledge of tools and equipment needed to perform polishing ability to operate polishing equipment and materials	power polishers, corrosion protection equipment, power washer, soap, applicator and chamois

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

29.04	Cleans vehicle.	knowledge of vehicle cleaning procedure ability to perform cleaning procedure	power polishers, power washer, soap, applicator and chamois

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

Task 30 **Performs final inspection.**

Trend: No apparent trend.

	Sub-tasks	Enabling Objectives	Tools & Equipment
30.01	Inspects vehicle visually.	knowledge of faults to look for when inspecting vehicle ability to locate faults	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

30.02	Conducts road tests on vehicles.	knowledge of road-test procedures ability to perform visual inspection ability to determine imperfections ability to test-drive to determine road worthiness	

NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

TOOLS AND EQUIPMENT

Tools

air hoses
Allan keys
applicators
bits
blocks
brooms
caulking gun
chamois
chisels
clamps
connectors
cut-off tool
cutting torch
drill
files
flange tool
frame flange tool
hack saw
hammers
heat gun
hole punch
magnet
manual applicators
measuring sticks
measuring tape
oxy-fuel cutter
paint shaker
plasma cutter
plastic squeegees
pliers
power polishers
propane torch
punches
putty knife
racks
rags
ratchets
razor blades and holder
sander
screw driver
shovels
soap
sockets
spoons
tin snips
tip cleaner
torque wrench
track style straighteners
trim clip removal tools
utility knife
wire crimping tool
wire cutters
wire stripping tools
wire wheels
wrenches

Equipment

air blow gun
air hose
air purifying respirator (charcoal)
approved container
ARC cutter
ball joint remover
benches
bonding equipment
brazing rod
calculator
catalogues
chemical cleaner
computer
computerized diagnostic equipment

continuity tester
corrosion protection applicator
corrosion protection material
dent puller
disposal containers
duct tape
dust mask
ear protectors
electrical tape
environmentally safe disposal containers
estimate sheet
eye wash station
Fax machine
fire blanket
fire extinguishers
fire hoses
first aid station
gloves
GMAW welder
goggles
grinder
hand sanding equipment
heat drying equipment
hot/cold glass removal tools
latex gloves
light
manufacturers' diagnostic equipment
manufacturers' installation and specifications manuals
manufacturers' maintenance instructions
manufacturers' operating instructions
masking materials
measuring equipment
microfiches
mixing tools
paint application equipment
paint booth
paint identification manuals
paint manufacturer's literature
paint mixing machine
paint scales
paint suits
panel protection covers
piano wire
plastic repair equipment
pneumatic air chisel
positive pressure air fed respirator
power sanding equipment
pressure applicators
primer application equipment
refinish equipment
respirator
rivet gun and rivets
safety eye wear
safety footwear
sand blaster
sandpapers
sealant
seam sealer applicator
service light
shop manuals
soldering tools
solvent resistant gloves
spot welder
spray equipment
spreaders
spring compressor
storage boxes or hangers
strainers
stretchers
surge protector
tack rags
technical bulletins
technical manuals
telephone
test cards
test lamps
ultrasonic equipment
vacuum cleaner
viscosity cups
water hose
welding blankets
welding clamps
welding equipment

GLOSSARY

Terms having a significant meaning for this analysis were operationally defined and are as follows:

conventional frame motor vehicle — a motor vehicle consisting of a rigid, heavy frame to which all mechanical and body components are fastened. The frame must be in proper alignment in order to establish correct functioning and alignment of all attached parts.

detailing — detailing includes all the activities performed in the preparation of a motor vehicle for delivery to the customer. Detailing includes but is not limited to unmasking, installation of trim and accessories, cleaning, polishing, application of corrosion protection and road testing.

electrical system — the electrical system on a motor vehicle is designed to generate, store and distribute electricity. The electrical system turns on, turns off and operates electrical components and instruments. The electrical system consists of a battery, alternator, wiring harness, lights, instruments and diagnostic equipment.

glass — a hard transparent substance that is laminated or tempered and sometimes tinted. Motor vehicle glass can be fixed as in windshields and rear windows or moveable as in side windows. There is also hardware used with fixed glass.

glass hardware — glass hardware consists of moveable and adjustable parts and components that ensure the operation of moveable glass and consists of but is not limited to tracks, glass run channels, plastic guides stops and regulators.

interior trim and upholstery — the interior trim and upholstery components of a motor vehicle are designed to provide the occupant with comfort, safety, information and an aesthetically pleasing environment. Interior components consist of but are not limited to door panels, seats, headliners, trim, instrument panels, carpets, dash pads and consoles.

mechanical	mechanical components and systems of a motor vehicle consist of the moving parts that produce motion or a state of balance. Mechanical components and parts consist of but are not limited to suspension systems (steering and suspension), cooling systems, air conditioning systems, brake systems, the power train and the exhaust system.
outer body panels	outer body panels are that portion of a motor vehicle that are attached to the frame or structural components of the vehicle by welding, bonding or bolts. Outer panels can be made of steel aluminium or composite materials and consist of but are not limited to doors, hoods, quarter panels, trunk lids, fenders and bumper covers.
refinishing	refinishing includes all the activities performed in the preparation of a motor vehicle body surface for the final colour coats. Refinishing provides a smooth, level, surface upon which paint will adhere, by sanding, filling, cleaning and priming the surface prior to the application of a final colour coat.
restraint systems	restraint systems provide safety to motor vehicle occupants by limiting their movement, or otherwise protecting them, when in the vehicle. Restraint systems can be passive or reactive. Passive restraint systems (meaning the driver does not control the operation or activation of the system) would be components, such as padded dash pads, head rests, collapsible steering columns, knee bolster, motorized seat belt and supplemental inflatable restraint systems (air bags). Active systems (the user must do something manually) are mainly the standard type seat belt systems which must be engaged by the individual.
structural components	any primary load-bearing portion of the body structure that affects its over-the-road performance or crash-worthiness.
unibody motor vehicle	a newer generation unitized motor vehicle, with the main difference being that all panels contribute to the overall structural integrity of the motor vehicle. These motor vehicles are lighter in weight, with weight saving attributed to computer-aided design and the use of stronger high-strength steels. Because all mechanical components (most of which are non-adjustable) are fastened directly to the body and because the body is of an impact-absorbing design, greater care must be taken in restoring correct body dimensions if the overall safety of the motor vehicle is to be regained after collision repair.

unitized body vehicle a motor vehicle constructed with the absence of a separate frame member, but achieving strength through many intricate sheet metal design fabrications. All mechanical components (most of which are adjustable) fasten directly to the body of the motor vehicle.

unitized stub-frame motor vehicle a motor vehicle consisting of a unitized body up to and including the cowl area, with a short,"stub-frame" attached to the front section. The stub-frame has similar characteristics to the conventional frame and retains all the front-end mechanical components and front-end sheet metal.

PERCENTAGE RATINGS

BLOCK A **SAFETY**

Task 1 Demonstrates safe working practices and techniques to ensure an injury-free work place.

BLOCK B **WORK PRACTICES AND PROCEDURES**

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	5	25	8	12	5	8	15	5	14	6	5	NV	10%

Task 2 Communicates with others.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	10	25	12	20	5	21	5	5	13	11	15	NV	13%

Task 3 Prepares repair estimates.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	5	8	20	5	25	5	5	13	7	5	NV	11%

Task 4 Follows work practices and procedures.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	10	25	30	20	70	19	35	42	33	15	5	NV	28%

Task 5 Operates tools and equipment.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	40	40	40	20	10	21	35	43	33	57	65	NV	36%

Task 6 Maintains tools and equipment.

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	20	5	10	20	10	14	20	5	8	10	10	NV	12%

BLOCK C FRAME AND STRUCTURAL COMPONENTS

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	25	5	8	15	10	23	30	15	14	33	5	NV	17%

Task 7 Assesses damages.

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	20	20	20	33	10	20	35	10	20	14	10	NV	19%

Task 8 Repairs structural component.

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	40	40	40	33	50	40	35	60	40	49	60	NV	45%

Task 9 Replaces structural component.

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	40	40	40	34	40	40	30	30	40	37	30	NV	36%

BLOCK D OUTER BODY PANELS

	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
%	20	25	30	15	30	18	24	30	18	12	30	NV	23%

Task 10 Assesses damages.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	20	15	30	10	25	20	10	10	14	5	NV	16%

Task 11 Repairs panel.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	40	40	30	30	40	42	50	45	35	49	45	NV	41%

Task 12 Replaces panel.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	40	40	55	40	50	33	30	45	55	37	50	NV	43%

BLOCK E GLASS

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	4	3	4	7	5	5	10	3	3	5	5	NV	5%

Task 13 Repairs or replaces movable glass.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	50	50	90	20	40	54	30	30	40	90	90	NV	53%

Task 14 Repairs or replaces fixed glass.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	50	50	10	80	60	46	70	70	60	10	10	NV	47%

BLOCK F **MECHANICAL COMPONENTS**

Nat. Avg. 6%

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
	5	5	10	5	5	9	5	5	10	6	5	NV

Task 15 Diagnoses mechanical problems.

Nat. Avg. 30%

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
	50	20	20	40	20	29	75	20	35	12	10	NV

Task 16 Repairs mechanical system.

Nat. Avg. 23%

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
	25	40	10	20	10	39	15	10	15	57	10	NV

Task 17 Replaces mechanical component.

Nat. Avg. 47%

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
	25	40	70	40	70	32	10	70	50	31	80	NV

BLOCK G **ELECTRICAL SYSTEM**

Nat. Avg. 5%

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
	4	5	4	7	5	6	5	2	6	6	2	NV

Task 18 Diagnoses electrical problems.

Nat. Avg. 34%

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK
	60	34	30	40	5	30	65	60	30	12	10	NV

Task 19 Repairs electrical system.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	33	25	30	20	40	25	15	25	57	30	NV	29%

Task 20 Replaces electrical component.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	33	45	30	75	30	10	25	45	31	60	NV	37%

BLOCK H RESTRAINT SYSTEMS

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	2	2	4	7	5	5	5	1	8	11	3	NV	5%

Task 21 Diagnoses restraint system.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	30	40	40	60	20	45	70	10	40	12	10	NV	34%

Task 22 Replaces restraint system.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	70	60	60	40	80	55	30	90	60	88	90	NV	66%

BLOCK I INTERIOR TRIM AND UPHOLSTERY

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	5	5	3	8	5	4	2	4	5	6	10	NV	5%

Task 23 Assesses damages.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	10	15	20	5	27	10	10	15	12	5	NV	14%

Task 24 Repairs interior component.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	50	45	15	60	10	40	30	20	30	31	5	NV	31%

Task 25 Replaces interior component.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	30	45	70	20	85	33	60	70	55	57	90	NV	55%

BLOCK J REFINISHING

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	25	20	21	15	25	18	2	30	16	12	30	NV	19%

Task 26 Prepares surface.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	50	60	60	50	50	55	80	70	70	85	70	NV	64%

Task 27 Applies paint.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	50	40	40	50	50	45	20	30	30	15	30	NV	36%

BLOCK K DETAILING

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	5	5	8	9	5	4	2	5	6	3	5	NV	5%

Task 28 Assesses detailing requirements.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	40	20	25	10	30	10	10	20	12	10	NV	19%

Task 29 Performs detailing procedure.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	60	40	65	30	70	45	80	80	70	70	80	NV	63%

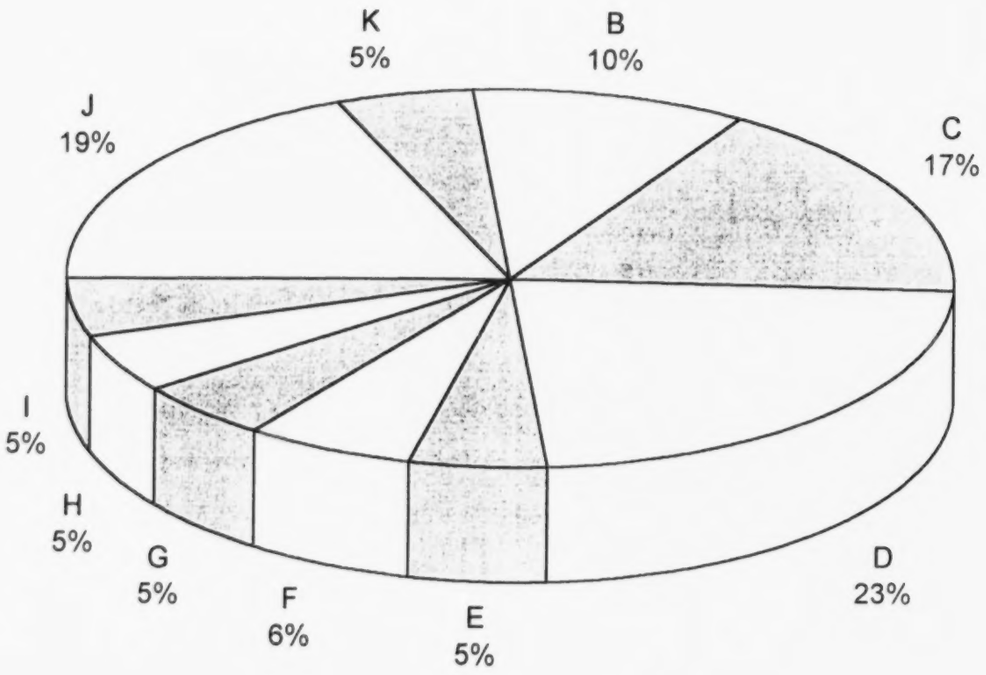
Task 30 Performs final inspection.

%	NF	NS	PE	NB	PQ	ON	MA	SK	AB	BC	NT	YK	Nat. Avg.
	20	20	15	45	20	25	10	10	10	18	10	NV	18%

BLOCK PERCENTAGES

BLOCK PERCENTAGES*

Motor Vehicle Body Repairer
(Metal and Paint)



* The average time a worker spends performing each block in a given year in relation to other blocks of the analysis, taking into consideration the complexity (importance plus difficulty) of the block.

TITLES OF BLOCKS

BLOCK A **SAFETY**••

BLOCK B **WORK PRACTICES AND PROCEDURES**

BLOCK C **FRAME AND STRUCTURAL COMPONENTS**

BLOCK D **OUTER BODY PANELS**

BLOCK E **GLASS**

BLOCK F **MECHANICAL COMPONENTS**

BLOCK G **ELECTRICAL SYSTEM**

BLOCK H **RESTRAINT SYSTEMS**

BLOCK I **INTERIOR TRIM AND UPHOLSTERY**

BLOCK J **REFINISHING**

BLOCK K **DETAILING**

** Since safety practices are a mandatory feature of all occupations, they are considered common core, ratings are not required and thus Block A does not appear on the chart.

MOTOR VEHICLE BODY REPAIRER (METAL AND PAINT) (1997)

	BLOCKS	TASKS	SUB-TASKS
A	**Safety**	**1.** Demonstrates safe working practices and techniques to ensure an injury-free work place.	1.01 Applies first aid. 1.02 Maintains good housekeeping. 1.03 Wears personal protective equipment. 1.04 Operates emergency safety equipment. 1.05 Assures protection from fire hazards. 1.06 Handles hazardous materials. 1.07 Complies with government safety standards and regulations.
B	**Work Practices and Procedures**	**2.** Communicates with others.	2.01 Accesses information. 2.02 Prepares and imparts technical information. 2.03 Applies verbal communication skills. 2.04 Applies written communication skills. 2.05 Uses office equipment.
		3. Prepares repair estimates.	3.01 Obtains necessary customer and vehicle information. 3.02 Performs visual inspection. 3.03 Lists parts, materials and labour required. 3.04 Calculates repair costs.
		4. Follows work practices and procedures.	4.01 Applies organizational skills. 4.02 Interprets the work order. 4.03 Inspects the damage. 4.04 Reconciles parts and materials received to estimate. 4.05 Identifies discrepancies. 4.06 Determines repair procedure. 4.07 Effects repair required. 4.08 Performs pre-delivery inspection.
		5. Operates tools and equipment.	5.01 Operates hand and power tools. 5.02 Operates general shop equipment. 5.03 Operates frame and measuring equipment. 5.04 Operates welding equipment. 5.05 Operates refinishing equipment.
		6. Maintains tools and equipment.	6.01 Maintains hand and power tools. 6.02 Maintains general shop equipment. 6.03 Maintains frame and measuring equipment. 6.04 Maintains welding equipment. 6.05 Maintains refinishing equipment.
C	**Frame and Structural Components**	**7.** Assesses damages.	7.01 Identifies primary and secondary damage. 7.02 Sets up vehicle on frame machine. 7.03 Measures structure to specifications. 7.04 Determines repair and replacement procedures.
		8. Repairs structural component.	8.01 Sets up vehicle for repair equipment. 8.02 Prepares the component for repair. 8.03 Straightens component. 8.04 Verifies specifications. 8.05 Restores integrity. 8.06 Prepares surface for corrosion protection. 8.07 Applies corrosion protection.
		9. Replaces structural component.	9.01 Corrects secondary damage. 9.02 Removes component. 9.03 Prepares damaged area for replacement component. 9.04 Installs replacement component. 9.05 Verifies specifications. 9.06 Prepares surface for corrosion protection. 9.07 Applies corrosion protection.
D	**Outer Body Panels**	**10.** Assesses damages.	10.01 Identifies panel composition. 10.02 Determines repair and replacement procedures.

MOTOR VEHICLE BODY REPAIRER (METAL AND PAINT) (1997)

BLOCKS	TASKS	SUB-TASKS						
	11. Repairs panel.	11.01 Prepares panel for reshaping.	11.02 Reshapes panel.	11.03 Restores panel strength.	11.04 Prepares panel surface for fill.	11.05 Fills panel.	11.06 Sands filler.	11.07 Applies corrosion protection.
	12. Replaces panel.	12.01 Prepares for removal of panel.	12.02 Removes panel.	12.03 Prepares panel for installation.	12.04 Installs panel.	12.05 Applies corrosion protection.		
E **Glass**	**13.** Repairs or replaces movable glass.	13.01 Tests for leaks.	13.02 Repairs leaks.	13.03 Adjusts hardware.	13.04 Removes glass.	13.05 Installs glass.	13.06 Replaces glass.	13.07 Checks for leaks and operation.
	14. Repairs or replaces fixed glass.	14.01 Tests for leaks.	14.02 Repairs leaks.	14.03 Removes glass.	14.04 Installs glass.	14.05 Replaces glass.	14.06 Checks for leaks.	
F **Mechanical Components**	**15.** Diagnoses mechanical problems.	15.01 Inspects mechanical faults visually.	15.02 Tests mechanical systems.	15.03 Determines procedure for repair.				
	16. Repairs mechanical system.	16.01 Sets up repair equipment.	16.02 Removes parts for accessibility.	16.03 Repairs component.	16.04 Verifies system operation and that specifications are met.			
	17. Replaces mechanical component.	17.01 Sets up repair equipment.	17.02 Removes defective component.	17.03 Installs component.	17.04 Verifies component operation and that specifications are met.			
G **Electrical System**	**18.** Diagnoses electrical problems.	18.01 Inspects electrical system visually.	18.02 Tests electrical system.	18.03 Interprets fault codes and flow charts.	18.04 Verifies diagnosis of problem.			
	19. Repairs electrical system.	19.01 Prepares system for repair.	19.02 Repairs system.	19.03 Verifies operation of system.				
	20. Replaces electrical component.	20.01 Prepares system for component replacement.	20.02 Removes defective component.	20.03 Installs component to manufacturer's instructions.	20.04 Verifies operation of component.			

MOTOR VEHICLE BODY REPAIRER (METAL AND PAINT) (1997)

	BLOCKS	TASKS	SUB-TASKS							
H	**Restraint Systems**	**21.** Diagnoses restraint system.	21.01 Inspects restraint system visually.	21.02 Tests restraint system.	21.03 Interprets fault codes and charts.	21.04 Determines replacement procedure.				
		22. Replaces restraint system.	22.01 Prepares component system for replacement.	22.02 Removes defective component.	22.03 Installs component to manufacturer's instructions.	22.04 Verifies operation of system.				
I	**Interior trim and Upholstery**	**23.** Assesses damages.	23.01 Inspects interior components visually.	23.02 Determines repair procedure.						
		24. Repairs interior component.	24.01 Prepares component for repair.	24.02 Repairs component.	24.03 Prepares component for refinishing.	24.04 Refinishes component.				
		25. Replaces interior component.	25.01 Prepares interior component for replacement.	25.02 Removes defective component.	25.03 Refinishes component.	25.04 Installs component.				
J	**Refinishing**	**26.** Prepares surface.	26.01 Inspects repair area visually.	26.02 Determines refinishing procedure.	26.03 Cleans surface.	26.04 Masks adjacent areas.	26.05 Sands surface.	26.06 Mixes primer.	26.07 Applies primer.	26.08 Performs final sanding.
		27. Applies paint.	27.01 Inspects prepared surface visually.	27.02 Determines paint procedure.	27.03 Mixes paint.	27.04 Matches paint.	27.05 Performs final cleaning procedures.	27.06 Applies top coat.		
K	**Detailing**	**28.** Assesses detailing requirements.	28.01 Unmasks vehicle.	28.02 Reviews work order.	28.03 Determines detailing procedure.					
		29. Performs detailing procedure.	29.01 Prepares for detailing.	29.02 Installs trim and accessories.	29.03 Polishes vehicle.	29.04 Cleans vehicle.				
		30. Performs final inspection.	30.01 Inspects vehicle visually.	30.02 Conducts road tests on vehicles.						